IN THE CLAIMS:

1. (CURRENTLY AMENDED) A method for manufacturing patterns on a reticle blank comprising a substrate made from material transparent to UV irradiation and having a first surface and a second opposite surface, the first surface coated with a coating layer, the method comprising:

providing at least one of a plurality of ultra-short pulsed laser beams;

providing focusing means for focusing said at least one of a plurality of ultra-short pulsed laser beams at at least one of a plurality of target locations;

~~providing displacing means for facilitating relative displacement of the reticle blank relative to said at least one of a plurality of target locations;~~

providing controlling means for controlling the synchronization and operation of the laser beam source~~,~~ and the focusing means ~~and the relative displacement facilitator~~; and

irradiating the ultra-short pulsed laser beam in a predetermined pattern directed at the second surface and passing through the substrate, wherein said at least one of a plurality of target locations is focused ~~on the coating layer or on its proximity~~ within a subsurface region in front of the coating layer.

2. (PREVIOUSLY AMENDED) The method of Claim 1, wherein said at least one of the plurality of target locations is focused in a zone within the substrate extending up to 50 microns from the coating layer.

3. (ORIGINAL) The method of Claim 1, wherein the ultra-short pulsed laser beams' wavelength is in the range of 350 to 1500 nanometer.

4. (ORIGINAL) The method of Claim 1, wherein the ultra-short pulsed laser beams are pulsed in the range of 10 to 500 femtoseconds.

5. (PREVIOUSLY AMENDED) The method of Claim 1, wherein the coating layer of the substrate is coated with anti-reflective layer.

6. (ORIGINAL) The method of Claim 1, wherein the plurality of ultra-short pulsed laser beams is obtained by splitting a primary ultra-short pulsed laser beam using beam splitter.

7. (ORIGINAL) The method of Claim 1, wherein the plurality of ultra-short pulsed laser beams is passed through a light modulator array, comprising an array of individually controllable elements that are each adapted to be set to either allow each beam of the plurality of ultra-short pulsed laser beams to traverse through, or effectively block it, thus achieving control over each beam separately.

8. (ORIGINAL) The method of Claim 7, wherein the focusing means comprises a microlens array, consisting of an array of microlens elements foci of predetermined lengths, said microlens array elements corresponding to the elements of the light modulator array so that a beam passing through an element of the light modulator array is focused by a corresponding element of the microlens array onto a target location.

9. (CURRENTLY AMENDED) The method of Claim ~~1~~ 24, wherein the displacing means comprises a motor-driven XYZ moving stage.

10. (ORIGINAL) The method of Claim 9, wherein said motor-driven moving stage is computer-controlled.

11. (CURRENTLY AMENDED) The method of Claim ~~1~~ 24, wherein the displacing means comprises a laser beam angle scanner.

12. (CURRENTLY AMENDED) The method of Claim ~~1~~ 24, wherein the displacement means comprises a motor driven XYZ stage and a laser beam angle scanner.

Cancel Claims 13 to 18.

Claims 19 to 23 previously cancelled.

24. (NEW) The method of Claim 1, wherein displacing means for facilitating relative displacement of the reticle blank relative to said at least one of a plurality of target locations are provided.

25. (NEW) A method for enhancing patterns on a reticle, the reticle comprising a transparent substrate and having a first surface and a second opposite surface, the first surface being covered with a coating layer with grooves in a predetermined pattern provided on it, or to be provided on it, the method comprising:

providing at least one of a plurality of ultra-short pulsed laser beams;

providing focusing means for focusing said at least one of a plurality of ultra-short pulsed laser beams at at least one of a plurality of target locations;

providing controlling means for controlling the synchronization and operation of the laser beam source and the focusing means; and

irradiating the ultra-short pulsed laser beam in a predetermined pattern directed at the second surface and passing through the substrate, wherein said at least one of a plurality of target locations is focused within the coating layer and proximal to edges of the predetermined pattern, thereby creating phase-shifting formation.

26. (NEW) The method of Claim 25, wherein the phase shifting formation is distanced from the coating layer by up to 10 microns.

27. (NEW) The method of Claim 25, wherein the phase shifting formation has a thickness that is $\lambda/2(n-n')$, where λ is the wavelength of an anticipated lithography process light source beam, n' is the index of refraction for the transparent material of the phase shifting layer of the substrate and n is the index of refraction of the substrate outside the phase shifting formation.

28. (NEW) The method of Claim 27, wherein the thickness of the phase shifting formation is in the range of from from 0.12 to 3.0 microns.

29. (NEW) The method of Claim 25, wherein said at least one of the plurality of target locations is focused in a zone within the substrate extending up to 50 microns from the coating layer.

30. (NEW) The method of Claim 25, wherein the ultra-short pulsed laser beams' wavelength is in the range of from 350 to 1500 nanometer.

31. (NEW) The method of Claim 25, wherein the ultra-short pulsed laser beams are pulsed in the range of from 10 to 500 femtoseconds.

32. (NEW) The method of Claim 25, wherein the coating layer of the substrate is coated with an anti-reflective layer.

33. (NEW) The method of Claim 25, wherein the plurality of ultra-short pulsed laser beams is obtained by splitting a primary ultra-short pulsed laser beam using a beam splitter.

34. (NEW) The method of Claim 25, wherein the plurality of ultra-short pulsed laser beams is passed through a light modulator array, comprising an array of individually controllable elements that are each adapted to be set to either allow each beam of the

plurality of ultra-short pulsed laser beams to traverse through, or effectively block it, thus achieving control over each beam separately.

35. (NEW) The method of Claim 34, wherein the focusing means comprises a microlens array, consisting of an array of microlens elements foci of predetermined lengths, said microlens array elements corresponding to the elements of the light modulator array so that a beam passing through an element of the light modulator array is focused by a corresponding element of the microlens array onto a target location.

36. (NEW) The method of Claim 25, wherein displacing means for facilitating relative displacement of the reticle blank relative to said at least one of a plurality of target locations are provided.

37. (NEW) The method of Claim 25, wherein the displacing means comprises a motor-driven XYZ moving stage.

38. (NEW) The method of Claim 37, wherein said motor-driven moving stage is computer-controlled.

39. (NEW) The method of Claim 25, wherein the displacing means comprises a laser beam angle scanner.

40. (NEW) The method of Claim 25, wherein the displacement means comprises a motor driven XYZ stage and a laser beam angle scanner